Commonwealth Edison
Dresden Nuclear Power Station
R.R. #1
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February 13, 1992

CWS LTR #92-080

U.S. Nuclear Regulatory Commission
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Licensee Event Report 92-003, Docket 050237 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(ii)(B).

L. F. Gerner for 2/15/92
Charles W. Schroeder
Station Manager
Dresden Nuclear Power Station

CWS/cfq

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
NRC Resident Inspector's Office
File/NRC
File/Numerical

(ZDVR/475)

LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1)	Docket Number (2)	Page (3)
Dresden Nuclear Power Station, Unit 2	0 5 0 0 0 2 3 7	1 of 0 3

Title (4) Postulated 2/3 Diesel Generator Cooling Water Pump Related Failure Due to Design Deficiency

Event Date (5)			LER Number (6)			Report Date (7)			Other Facilities Involved (8)	
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)
									Dresden Unit 3	0 5 0 0 0 2 4 9
1	21	9 2	9 2	0 0 3	0 0	0 2	1 3	9 2		

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)					
N	___ 20.402(b)	___ 20.405(c)	___ 50.73(a)(2)(iv)	___ 73.71(b)		
POWER LEVEL (10) 0 0 0	___ 20.405(a)(1)(i)	___ 50.36(c)(1)	___ 50.73(a)(2)(v)	___ 73.71(c)		
	___ 20.405(a)(1)(ii)	___ 50.36(c)(2)	___ 50.73(a)(2)(vii)	___ Other (Specify		
	___ 20.405(a)(1)(iii)	___ 50.73(a)(2)(i)	___ 50.73(a)(2)(viii)(A)	in Abstract		
	___ 20.405(a)(1)(iv)	X 50.73(a)(2)(ii)	___ 50.73(a)(2)(viii)(B)	below and in		
	___ 20.405(a)(1)(v)	___ 50.73(a)(2)(iii)	___ 50.73(a)(2)(x)	Text)		

LICENSEE CONTACT FOR THIS LER (12)

Name	TELEPHONE NUMBER
	AREA CODE
Ismael Rivera Jr., Technical Staff System Engineer Ext. 2549	8 1 5 9 4 2 - 2 9 2 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)		Expected Submission Date (15)	Month	Day	Year
___ Yes (If yes, complete EXPECTED SUBMISSION DATE)	___ X NO				

ABSTRACT (Limit to 1400 spaces, i.e, approximately fifteen single-space typewritten lines) (16)

On January 21, 1992, with Unit 2 in cold shutdown and Unit 3 in a refuel outage, it was determined during an engineering review that a postulated flood in the Circulating Water intake structure resulting from a Circulating Water pump discharge pipe break could render the Unit 2/3 Diesel Generator Cooling Water Pump (DGCWP) inoperable, if flood damage were to occur to control circuitry contained in an unsealed power transfer switch junction box located below the design basis flood level. The root cause was attributed to a design deficiency within a 1986 modification installing the transfer switch. The safety significance is considered minimal because the sequence of events required for this event to occur is unique and extremely remote. Corrective actions included properly sealing the junction box and conduit involved, and identifying on the appropriate prints the locations and type of sealant installed.

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2527 MWt rated core thermal power

Nuclear Tracking System (NTS) tracking code numbers are identified in the text as (XXX-XXX-XX-XXXXX)

EVENT IDENTIFICATION:

Postulated 2/3 Diesel Generator [EK] Cooling Water Pump Flood Related Failure Due to Design Deficiency

A. CONDITIONS PRIOR TO EVENT:

Unit(s): 2 (3) Event Date: January 21, 1992 Event Time: 1300 Hours

Reactor Mode(s): N (N) Mode Name(s): Shutdown (Refuel) Power Level(s):0 (0)%

Reactor Coolant System (RCS) Pressure(s): 0 (0)psig

B. DESCRIPTION OF EVENT:

On January 21, 1992, with Unit 2 in cold shutdown and Unit 3 in a refuel outage, a Nuclear Engineering Department (NED) review of Generic Letter 89-13 flood protection requirements concerning the Diesel Generator Cooling Water Pumps (DGCWPs) concluded that the Unit 2/3 DGCWP was susceptible to flood-induced damage if a postulated flood resulting from a Circulating Water [NN] pump discharge pipe break were to occur. This potential failure mode involved discovery of an unsealed Unit 2/3 DGCWP power transfer switch junction box located in the Circulating Water intake structure (cribhouse) at elevation 508', which is below the design basis flood level of 517'-8". Consequently, it was determined that the Unit 2/3 DGCWP was susceptible to this concern since November 1986 when the transfer switch was installed. The Unit 2/3 Diesel Generator was declared inoperable at 1300 hours on January 21, 1992 pending resolution of the sealing concern. Upon completion of proper sealing of the involved junction box and conduit, the Unit 2/3 was declared operable at 2015 hours on January 23, 1992.

C. APPARENT CAUSE OF EVENT:

This report is submitted in accordance with 10CFR50.72(a)(2)(ii)(B), which requires the reporting of any condition outside the design basis.

Investigation revealed that the transfer switch in question had been installed under 1986 Modification M12-2/3-84-62 in order to enhance utilization of the Unit 2/3 Diesel Generator as an emergency power source during 10CFR50 Appendix R safe shutdown design basis events. Review of the modification design material indicates that the Architect Engineering firm design personnel involved had considered the potential for cribhouse flooding during the design process. Consideration of flooding has been determined to be relative to the maximum expected river level at peak flood conditions. It has also been determined that an assumption was made that if the DGCWP was required to operate, a Loss Of Offsite Power (LOOP) would have occurred causing the Circulating Water pumps to trip thereby allowing water which could leak into the area to equalize with the river level. However, a design deficiency occurred in that the postulated flood level used as a criterion for sealing did not take into the account the possibility of a Circulating Water pump line break occurring without coincident loss of normal AC power. This scenario could potentially result in flooding of the unsealed power transfer switch junction box and result in subsequent loss of the Unit 2/3 DGCWP.

D. SAFETY ANALYSIS OF EVENT:

The sequence of events postulated is unique and extremely remote. The events necessary to meet this postulated accident consists of a Circulating Water pump discharge pipe break in conjunction with either a LOOP or Loss of Coolant Accident (LOCA). Each Unit has its own Diesel Generator sized to carry the Division II Emergency Core Cooling System (Low Pressure Coolant Injection [BO] and Core Spray [BM]) power requirements. The Unit 2 and Unit 3 Diesel Generators and auxiliaries were not affected by this event. The Unit 2/3 Diesel Generator can supply the Unit 2 or Unit 3 Emergency Core Cooling System Division I loads. The Diesel Generator systems are also sized to support safe shutdown under LOOP or 10CFR50 Appendix R severe fire conditions utilizing one Diesel Generator.

E. CORRECTIVE ACTIONS:

The immediate corrective actions taken were to properly seal the involved junction box and conduit under Work Requests 06057 and 06058. The Unit 2/3 Diesel Generator was then declared operable on January 23, 1992 at 2015 hours. Drawing Change Request (DCR) D-92-017 was also initiated identifying the locations and types of seals installed.

The Nuclear Engineering Department (NED), completed a walkdown of the cribhouse, and issued their report, "Service Water Design Review" in May of 1991. At that time it was determined that the DGCWP and its components comprise the only safety related system in the cribhouse. Corporate NED procedure ENC-QE-06.1, 10CFR50.59 Safety Evaluation, now takes into account potential flooding concerns during the initial safety evaluation conducted for all safety related modifications. This will prevent a recurrence of a condition of this type.

F. PREVIOUS OCCURENCES:

DVR Number	Title
12-2/3-89-154	Postulated LPCI Swing Bus Loss Resulting From Diesel Generator Voltage Failure Design Deficiency

A review of INPO Operating Experience report OE 3573 concluded that an original construction design deficiency existed. A modification was designed and installed providing the LPCI Swing Bus with enhanced protective relaying.

G. COMPONENT FAILURE DATA:

This event did not involve actual component failure; therefore, this section is not applicable.